



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,121	03/16/2005	Puhua Zhang	56816.16-40	8913
30734 7590 05/13/2010 BAKER & HOSTETLER LLP WASHINGTON SQUARE, SUITE 1100 1050 CONNECTICUT AVE. N.W. WASHINGTON, DC 20036-5304				
EXAMINER MENDEZ, ZULMARIAM				
ART UNIT 1795		PAPER NUMBER		
NOTIFICATION DATE 05/13/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@bakerlaw.com

Office Action Summary

Application No.

10/528,121

Applicant(s)

ZHANG, PUHUA

Examiner

ZULMARIAM MENDEZ

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 26, 2010 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masselin (FR 2284665) in view of Hideaki (EP 0846847) and further in view of Davis et al. (US Patent no. 4,565,548).

With regard to claim, Masselin discloses a method for preparation and treatment of a liquid or gas fluid (page 1, lines 1-3), comprising mixing water with ethanol in a certain ratio by weight (page 1, lines 9-14, 18-20; page 2, lines 17-21), heating and evaporating the obtained mixture to obtain a vapor mixture (page 1, lines 18-23; page 2, lines 26-28) and passing the said vapor mixture through an electric field of 1 to 15KV (page 1, lines 20-21; page 2, lines 30-32; page 3, lines 2-3) but fails to explicitly disclose wherein such electric field is a DC electric field.

Hideaki discloses treating a mixture of water and ethanol with a direct current electric field ranging from 6KV to 15KV (page 3, lines 18-21) for charging the gas mixture and improve engine efficiency. Therefore, one having ordinary skill in the art at the time of the invention, would have found it obvious to use a DC electric field, as taught by Hideaki in the process of Masselin in order to charge the gas mixture and improve engine efficiency.

Masselin in view of Hideaki discloses all of the process steps, as applied to claim 1 above, wherein the mixture of water with ethanol is made in predetermined proportions but fails to explicitly teach that such ratio is of 4:1 to 1:1 by weight.

Davis discloses a fuel composition produced by a mixture of an alcohol, such as ethanol in the amount of about 2 to 10 volume % (~0.1578 to 7.89 wt%) and about 0.01 to 0.5 wt % of water (col. 2, lines 42-46, 53-55) in order to provide a clear stable

alcohol-water fuel composition. therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a predetermined mixture of water and ethanol, as taught by Davis, in the process of Masselin in view of Hideaki in order to provide a clear stable alcohol-water fuel composition.

Response to Arguments

5. Applicant's arguments filed on February 26, 2010 have been fully considered but they are not persuasive. The applicant argues:

a. Masselin discloses the use of an AC (Alternating Current) electric field, which in light of the well known acknowledge in the electrolysis art, water can only be electrolyzed in a DC (Direct Current) electric field.

In response, the examiner does not find this argument persuasive because it is well known in the art that electrolysis can be performed by either an AC or DC electric field as evidenced by Igarashi (US Patent no. 6,706,168) as well as Okazaki (US Patent no. 4,810,344). Further, claim 1 merely recites passing the mixture through an electric field greater than 6 V DC, and does not positively recite the electrolysis of water aspect of the invention.

b. The Prior Art of record teaches different objects such as, ionize the liquid fuel in order to improve the combustion efficiency of the fuel and obtain a negatively-charge and peroxidized hydrocarbon gas by ionization rather than to change water into fuel.

In response, the examiner does not find this argument persuasive because of the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Again, claim 1 merely recites three method steps of mixing water with ethanol, vaporizing the mixture and passing the vaporized mixture through a DC electric field. None of the positively recited method steps require conversion of water into anything. In addition, Masselin (FR 2284665) teaches a method and device to electrolyze a mixture of water and an alcohol, ethanol, to provide the electrolysis product as a feed to a subsequent apparatus, such as an internal combustion engine (page 1, first paragraph). Therefore, the method disclosed by Masselin is capable to convert water into fuel.

c. The Prior Art made of record fails to teach a mixture of water and ethanol only.

In response, the examiner does not find this argument persuasive because it is noted that the claimed invention requires a method "characterized by" mixing water and ethanol. The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZULMARIAM MENDEZ whose telephone number is (571)272-9805. The examiner can normally be reached on Tuesday-Friday from 9am to 7pm.
7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. M./
Examiner, Art Unit 1795

/Alexa D. Neckel/
Supervisory Patent Examiner, Art Unit 1795